**Executive Office of Energy and Environmental Affairs**
**Massachusetts Department of Energy Resources**

# Green Communities Act Section 83A - Long Term Contract Carve-out

# Determination of Eligible Technologies

### October 23, 2013 – Amended October 15, 2014

With this determination the Massachusetts Department of Energy Resources (DOER) specifies which technologies meet the criteria of the carve-out of the long term contracts requirement pursuant to Section 83A (Section 83A) of the Green Communities Act as amended by Chapter 209 of the Acts of 2012, Section 36. Section 83A directs DOER to determine which "newly developed, small, emerging or diverse renewable energy distributed generation facilities technologies" are eligible for the carve-out.

## A. Analysis of eligible technologies/projects

Projects seeking a long term contract under this carve-out need to be "newly developed, small, emerging or diverse renewable energy distributed generation facilities", and more specifically need to meet the following criteria:

1. Qualify for the Massachusetts Renewable Portfolio Standard Class I.
2. Be located in the service territory of the utility. An energy project can only apply for a long term contract with the utility that services its location.
3. Have a nameplate capacity not larger than 6 MW. ISO New England defines[1] nameplate capacity as "the rating of a generator and a measure of its ability to produce electricity". In the context of this determination, DOER specifies that the nameplate capacity will be (a) the rated AC capacity of the power generating installation or (b) in the case of co-firing or blending an RPS Class I eligible with an ineligible fuel, the capacity represented by the average annual portion of the total electrical output that qualifies as RPS Class I Renewable Generation. Note that in the latter case the entire Generation Unit must meet the requirements of an advanced biomass Power Conversion Technology as set forth in the RPS Class I[2].
4. Use a technology with less than 30 MW installed in MA before 4/1/2012.
5. Not be qualified for net metering services. A project can seek qualification as a net metering facility while simultaneously bidding for a long term contract under this carve-out. If the project is awarded a long term contract, it must demonstrate in writing it (a) withdrew its application for a cap allocation if the project doesn't currently receive net metering services, or (b) relinquished net metering services if the project is currently receiving net metering services.
6. Be a distributed generation facility. Distributed generation (DG) is any electricity generating technology installed by a customer or independent electricity producer that is connected at the distribution system level of the electric grid[3].

[1] http://www.iso-ne.com/support/training/glossary/index-p4.html
[2] 225 CMR 14.05(1)(a)7
[3] https://sites.google.com/site/massdgic/home/frequently-asked-questions#question1

The DOER analyzed installed capacity of the different renewable technologies in the table below. This analysis shows that criterion 4 excludes the following technologies: solar PV, wind turbines, hydroelectric and landfill gas. From the currently qualified technologies in the MA Renewable Portfolio Standard Class I (RPS), the following technologies are not excluded based on criterion 4: anaerobic digestion and biomass. Furthermore, a number of Class I eligible renewable energy technologies currently have no projects qualified in MA, but may be considered for the list of eligible technologies. These are detailed below.

| | **MA generation qualified before 4/1/2012 (MW)[4]** | | | |
|---|---|---|---|---|
| **Technology/Resource** | **Class I** | **SCO** | **Class II** | **Total** |
| Solar Photovoltaic | 19 | 70 | | **89** |
| Hydroelectric | 7 | | 43 | **50** |
| Landfill Gas | 44 | | | **44** |
| Wind | 43 | | | **43** |
| Anaerobic Digester[5] | 19 | | | **19** |
| Biomass | 10 | | | **10** |

## B. Technology Determination

The DOER determines the following list of technologies/resources to **be eligible** for long term contracts solicited under the Section 83A Carve-out.

- Biogas from **anaerobic digestion (AD)**.
- **Hybrid anaerobic digestion and landfill gas projects,** where AD biogas is blended with landfill gas, provided blending increases the electricity generation of the AD facility and the landfill was previously unable to have a viable energy generation project absent the AD facility. The energy contribution (measured in Btu) of the landfill gas to the electricity generated onsite has to be less than 50% of the annual onsite electricity generation based on projected steady-state operations[6]. When submitting a request to DOER for determination of project technology eligibility (as set forth below) the Project Proponent must demonstrate to DOER's satisfaction that energy generation at the landfill was previously economically or technically unfeasible. The DOER's evaluation of the feasibility of such a standalone energy project will at least take the following guidelines into consideration:
    - No energy generating project utilizing landfill gas was present at the landfill after April 1, 2002.
    - The landfill gas flow and energy content must be insufficient for a standalone project. Site specifics will vary, but in general either the methane content of the landfill gas should be below 50% or the landfill gas flow must be below 300 standard cubic feet per

[4] Note that the date of RPS qualification is used as a proxy for the date of installation, except for the Solar Carve-out where the commercial operation date was used.

[5] The MWRA Deer Island AD is rated 18 MW, but the effective use of digester gas in 2012 represented 2.7 MW (Nexant, January 2013). The steam generator was retrofitted after 4/1/2012 with a back pressure turbine, adding 1.1 MW to the installed capacity.

[6] Steady state operations will be the projected operational level in the third year of operations.

minute (scfm) for a project looking to deploy an internal combustion engine, or 1,300 scfm for a project looking to deploy a gas turbine.

- **Biomass** energy using an RPS Class I eligible biomass fuel and with high Overall Efficiency to meet RPS Class I standards, in combined heat and power applications or deploying alternative technologies such as:
    - Pyrolysis: thermal conversion (destruction) of organics in the absence of oxygen to produce mainly biofuels,
    - Gasification: thermal conversion of organic materials at elevated temperature and reducing conditions to produce primarily permanent gases.
- **Marine or hydrokinetic** energy[7], including but not limited to in-line hydro, tidal, current and wave energy.
- Emerging **run-of-river hydroelectric** technologies with direct passage of fish and other aquatic life and which do not use conventional water turbines.
- **Fuel cells** using biogas or another eligible RPS Class I Renewable Fuel.
- **Wind turbines**,
    - having a nameplate capacity less than or equal to 99kW,
    - or using an innovative or emerging design different from standard horizontal axis turbines (eg. airflow acceleration) to the extent that it has either already been tested as a prototype or is a scale-up of a previously deployed or field-tested technology,
    - or a field verification for small offshore wind projects in state waters.
- **Solar thermal electric**: solar energy used to generate electricity by heating up a fluid.
- **Geothermal** energy to produce electricity using steam from reservoirs of hot water found a few miles or more below the Earth's surface.

Project proponents seeking to participate in the Section 83A Carve-out shall apply to DOER for a conditional Statement of Qualification under the Class I Renewable Energy Portfolio Standard and request of DOER a determination as to whether the technology to be proposed in the project is eligible under the Section 83A Carve-out. Project proponents must submit a preliminary Class I Statement of Qualification Application (SQA) via the ordinary process. Project proponents shall request DOER to determine if a specific project technology utilizes an eligible technology from Section B above for the Section 83A Carve-Out solicitation. Such request shall be made in writing to the DOER, separate from the Class I SQA, and shall include documentation necessary to meet the requirements of this guideline. In making such a determination, DOER may request documentation from the project proponent to demonstrate that the specific technology meets the terms of this guideline. DOER will notify the project proponent directly as to the Department's findings regarding the SQA and eligible technology determination. Project proponents can submit this request at any time, but no later than 4 weeks ahead of the due date for proposals under the Request for Proposals for contracts under the Section 83A Carve-out.

[7] 225 CMR 14.02: "hydrokinetic energy: electrical energy derived from waves, tides and currents in oceans, estuaries and tidal areas; free-flowing water in rivers, lakes, streams, and human-made channels, provided that such water is not diverted, impounded, or dammed; or differentials in ocean temperature, called ocean thermal energy conversion." If a man-made channel, built for a non-energy generating purpose, should take advantage of the free-flowing water in a generating unit, that unit should be considered to produce hydrokinetic energy.

### C. Other technologies

Other new technologies may be eligible on a case by case basis provided approval by DOER and provided they qualify under the analysis provided herein. Project proponents will have to demonstrate the viability of the technology and its application in Massachusetts to DOER's satisfaction. DOER will not consider additional technologies once the proposed Request for Proposals is filed for review and approval by the Department of Public Utilities under Section 83A.

### D. Integration of grid modernization measures

DOER encourages Section 83A project proponents with eligible technologies to integrate measures that help the Companies make measurable progress towards the grid modernization goals identified by the Department of Public Utilities.

### E. Non-eligible technologies

Based on the criteria laid out in Section 83A of the Green Communities Act, the following technologies will not be eligible for the long term contract carve-out:

- Projects that qualified for net metering and use the net metering services concurrent with a Long Term Contract pursuant to the Section 83A,
- Projects with a nameplate capacity larger than 6 MW or using a technology that has more than 30 MW installed capacity in the Commonwealth prior to 4/1/2012,
- Solar PV,
- Hydroelectric projects using conventional water turbines,
- Landfill gas, unless they are unable to generate energy on their own, and by blending with biogas from anaerobic digestion can increase the energy generation of the AD facility,
- Onshore wind projects using standard horizontal axis turbines with a nameplate capacity of more than 99 kW.

### F. Procedure for Request for Proposals

Per the statute, prior to December 31, 2016, Massachusetts Distribution Companies (Fitchburg Gas and Electric Company d/b/a/ Unitil, National Grid, NSTAR Electric Company and Western Massachusetts Electric Company) must solicit proposals for long-term contracts with eligible renewable energy distributed generation facilities. Unlike the larger Section 83A process, each utility will contract for its own projects and contracts within their service territory. The contracts must represent 0.4% of the company's total energy demand. DOER and the Office of the Attorney General shall be consulted by the Companies regarding their contracting and solicitation methods. Prior to issuing a Request for Proposal, the timetable and method of solicitation must be approved by the Department of Public Utilities (220 CMR 21.04(6)).

If after a first round of RFP's the utilities did not get enough eligible proposals to fill the carve-out share, DOER may issue a Request for Information to identify potential new technologies or project types and use this information to help the utilities design subsequent rounds of RFP's.